

Notice of Allowability	Application No.	Applicant(s)	
	10/642,248	DEANGELIS ET AL.	
	Examiner	Art Unit	
	Nashaat T. Nashed, Ph. D.	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/27/06.
2. ☒ The allowed claim(s) is/are 1-10, 13, 15-19, 23-26, 29-36, 74, 75, 77, 78, 81, 83-87, 91-100, 110 and 112-115.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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The application has been amended as requested in the communication filed September 5, 2006 and September 27, 2006. Accordingly, claims 1-3, 6, 13, 15, 25, 77, 81, and 114 have been amended; new claim 115 has been added, and claims 11, 12, 20-22, 27-28, 37-73, 76, 79, 80, 82, 88-90, and 101-111 have been canceled.

The terminal disclaimer filed on September 5, 2006 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of U. S. patents 6,444,447 and 7,060,469 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claims 1-10, 13, 15-19, 23-26, 29-36, 74, 75, 77, 78, 81, 83-87, 91-100, and 112-115 are pending and under consideration.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figures 20, 21, 26, 27, 28, 29, and 34 do not show the features described in the Figure description. In fact all of them can't be comprehended. The examiner recognizes the difficulties of obtaining good pictures for gels. A drawing of the gel showing the various bands of the gels would be acceptable with an amendment to the figure description indicating that the figure represents relative position of the different bands. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kathryn L. Hester on October 16, 2006.

The application has been amended as follows:

In claim 1 (i) Line 5, delete "[,]"; and, (ii) in part (e), line two, delete ----[a]--- between "to" and "the".

Claim 4 The method of claim 1 wherein, in the step of providing at least one functional acceptor, the functional acceptor is a hyaluronic acid (HA) oligosaccharide having between ~~about~~ three sugar units and oligosaccharide polymer having molecular weight of about 4.2 kDa.

In claim 77, part (e), line two, delete ----[a]--- between "to" and "the".

Claim 114 A method for enzymatically producing defined glycosaminoglycan polymers comprising the steps of:
providing at least one functional acceptor, wherein the functional acceptor has at least two sugar units selected from the group consisting of uronic acid [] and hexosamine;
providing at least one recombinant glycosaminoglycan transferase having an empty acceptor site and being capable of elongating the at least one functional acceptor in a controlled fashion to form extended glycosaminoglycan molecules, the at least one recombinant glycosaminoglycan transferase selected from the group consisting of:
(a) a recombinant glycosaminoglycan transferase having an amino acid sequence as set forth in SEQ ID NO:2;
(b) a recombinant glycosaminoglycan transferase encoded by a nucleotide sequence as set forth in SEQ ID NO:1;
(c) a truncated form of (a) encoded by a nucleotide sequence as set forth in any of SEQ ID NOS:10, 20, 27-32 and 71;
(d) a mutated form of (a) encoded by a nucleotide sequence as set forth in any of SEQ ID NOS: 11, 12, 16-19, 33-50;
e) a recombinant glycosaminoglycan transferase encoded by a nucleotide sequence capable of hybridizing to [a] the nucleotide sequence of SEQ ID NO:1 under hybridization conditions comprising hybridization at a temperature of 68°C in 5xSSC/5x Denhardt's solution/1.0% SDS, followed with washing in 3x SSC at 42°C; and;
providing at least one UDP-sugar selected from the group consisting of UDP-GlcUA, UDP-GlcNAc, and UDP-GlcN in a stoichiometric ratio to the at least one functional acceptor such that the at least one recombinant glycosaminoglycan transferase elongates the at least one functional acceptor to provide glycosaminoglycan polymers wherein the glycosaminoglycan polymers have a desired size distribution such that the glycosaminoglycan polymers are substantially monodisperse in size such that the glycosaminoglycan polymers have a polydispersity value in a range of from about 1.0 to about 1.1, and wherein the desired size distribution is obtained by controlling the stoichiometric ratio of UDP-sugar to functional acceptor.


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Claims 1-10, 13, 15-19, 23-26, 29-36, 74, 75, 77, 78, 81, 83-87, 91-100, and 112-115 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashaat T. Nashed, Ph. D. whose telephone number is 571-272-0934. The examiner can normally be reached on MTWTF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen M. Kerr can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Nashaat T. Nashed, Ph. D.
Primary Examiner
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